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APPLICANT(S): Ting K. Yee, Peter H. Chang, Shin-Sheng Tarn, Gregory M. Cutler, Slava Yazhgur, Ji Li, Laurence J. Newell, James F. Coward, Michael W. Rowan, Norman L. Swenson, Matthew Bashaw

APPLICATION NO.: 09/918,886

FILING DATE: July 30, 2001

TITLE: Optical communications using multiplexed single sideband transmission and heterodyne detection

EXAMINER: Unassigned

GROUP ART UNIT: 2633

ATTY. DKT. NO.: 20852-05682

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Dated: January 10, 2002

By:

Michael W. Farn, Reg. No. 41,015

COMMISSIONER FOR PATENTS
WASHINGTON, DC. 20231

INFORMATION DISCLOSURE STATEMENT
Under 37 CFR §§ 1.56 and 1.97-98

SIR:

Pursuant to the provisions of 37 CFR §§ 1.56 and 1.97-98, enclosed herewith is modified form PTO-1449 listing references for consideration by the Examiner.

The filing of this Information Disclosure Statement shall not be construed as a representation regarding the completeness of the list of references, or that inclusion of a reference in this list is an admission that it is prior art or is pertinent to this application, or that a search has been made, or as an admission that the information listed is, or may be considered to be, material to patentability, or that no other material information exists, and shall not be construed as an admission against interest in any manner.

- ☒ This application relies, under 35 U.S.C. § 120, on the earlier filing date of prior applications Serial No. 09/728,373, filed on November 28, 2000, Serial No. 09/474,659, filed on December 29, 1999, and the references cited therein are hereby referenced, but are not required to be provided in this application under 37 CFR § 1.98(d).

The Information Disclosure Statement submitted herewith is being filed:

- ☒ within three months of the filing date of the application, or date of entry into the national stage of an international application, or before the mailing date of a first official action on the merits, whichever event last occurred;
OR
- ☐ before the mailing of a first official action after the filing of a request for continued examination (RCE) under 37 CFR § 1.114;
- ☐ after three months of the filing date of this national application or the date of entry of the national stage in an international application, or after the mailing date of the first official action on the merits, whichever event last occurred, but before the mailing date of the first to occur of either:
- (1) a final action under 37 CFR §1.113; OR
 - (2) a notice of allowance under 37 CFR §1.311; AND
- ☐ attached hereto is the fee of \$180, as set forth under 37 CFR §1.17(p), for submission of this Information Disclosure Statement under 37 CFR. § 1.97(c); OR
- ☐ Applicant certifies pursuant to 37 CFR § 1.97(e) that:
- ☐ each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement;
OR
- ☐ no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing this certification after making reasonable inquiry, was known to any individual designated under 37 CFR § 1.56(c) more than three months prior to the filing of this Statement.

OR

- ☐ before the payment of the issue fee but after the mailing date of the first to occur of either:
- [1] a final action under 37 CFR § 1.113; OR
 - [2] a notice of allowance under 37 CFR § 1.311; AND
- in accordance with the requirements of 37 CFR § 1.97(d):
- ☐ Applicant certifies pursuant to 37 CFR. § 1.97(e) that:
- ☐ each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; OR
 - ☐ no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing this certification after making reasonable inquiry, was known to any individual designated under 37 CFR § 1.56(c) more than three months prior to the filing of this Statement; AND
- ☐ Applicant hereby respectfully petitions for the consideration of the accompanying Information Disclosure Statement under 37 CFR § 1.97(d)(2); AND
- ☐ Applicant submits the petition fee of \$180 as set forth in 37 CFR § 1.17(p).
- ☐ Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not received by any individual designated in 37 CFR § 1.56(c) more than thirty days prior to the filing of this Information Disclosure Statement. 37 CFR § 1.704(d).
- ☒ Applicant submits that no fee is required for the consideration of the accompanying Information Disclosure Statement.

Consideration of the listed references and favorable action are solicited.

Respectfully submitted,
TING K. YEE et al.

Dated: January 10, 2002

By: Michael W. Farn
Michael W. Farn, Reg. No. 41,015
FENWICK & WEST LLP
Two Palo Alto Square
Palo Alto, CA 94306
Tel: (650) 858-7823
Fax: (650) 494-1417

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FORM PTO-1449

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Attorney's Docket No.

20852-05682

Serial No.

09/918,886

INFORMATION DISCLOSURE CITATION

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Applicant

Ting K. Yee et al.

Filing Date

July 30, 2001

Group Art Unit

2633

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	A	4,061,577	12/6/77	Bell	250	199	8/18/76
	B	4,701,904	10/20/87	Darcie	370	3	
	C	4,953,156	8/28/90	Olshansky et al.	370	3	9/8/88
	D	5,351,148	9/27/94	Maeda et al.	359	124	5/26/93
	E	5,387,927	2/7/95	Look et al.	348	6	9/17/93
	F	5,430,568	06/04/95	Little et al.	359	124	
	G	5,546,190	8/13/96	Hill et al.	359	158	9/9/92
	H	5,559,561	9/24/96	Wei	348	470	7/15/94
	I	5,576,874	11/19/96	Czerwec et al.	359	123	
	J	5,596,436	1/21/97	Sargis et al.	359	132	7/14/95
	K	5,680,238	10/21/97	Masuda	359	132	11/9/95
	L	5,930,231	07/27/99	Miller et al.	370	210	

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	M	EP 0 717 521 A	06/19/96	EP				No
	N	EP 0 756 393 A1	29.01.97	EP				No
	O	GB 2179817 A	3/11/87	UK	H04B H03F	9/00 7/00		NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

P	Business Wire, "Harmonic Lightwaves Announces Availability of First MCNS-Compliant QAM Modulator; TRANsend QAM is a Vital Component for Delivering Digital Services", November 18, 1997
Q	Corvaja, Roberto, et al., "Bit Error Rate Evaluation of Dual-Filter Heterodyne FSK Optical System," Journal of Optical Communications, December 1, 1994, Vol. 15, No. 6, Berlin, DE, Pages 208-213
R	Cvijetic, M., "Coherent and Nonlinear Lightwave Communications," Artech House, Boston, MA 1996

EXAMINER

DATE CONSIDERED

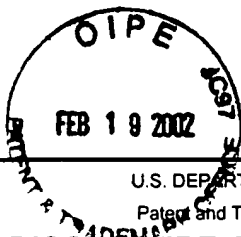
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FOREIGN PATENT DOCUMENTS

Document Number	Date	Country	Class	Subclass	Translation
					Yes No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

S	Dai, H., C. Lin, M. Ramachandran, "Hybrid AM/QAM Video Trunking Lightwave Systems With Cascaded EDFAs", <u>Conf. Proc. LEOS, 97 Annual Meeting, IEEE Lasers & Electro Optic Society</u> , 1997, Vol. 1, pp. 319-320
T	Douverne, E., M. Ottka, K. Ruthemann, K. Siegel, "Ein 64-QAM-Modem für SDH-Richtfunkgeräte mit integriertem Kreuzpolarisationsentkoppler", Vol. 40, No. 11, 1 March 1994, pages 89-100
U	Fong, Thomas K., et al., "Linewidth-Insensitive Coherent AM Analog Optical Links Using Semiconductor Lasers," <u>IEEE Photonics Technology Letter</u> , April 1, 1993, Vol. 5, No. 4, New York, Pages 469-471
V	Fuse, M., Y. Kudo, K. Maeda, "Development of 128 Optical Distribution System of 150 chs AM/QAM Hybrid Signals", <u>Electronics and Communications in Japan</u> , November 1996, Volume 79, Issue 11, Part 1, pp. 65-77
W	Green, P., "Fiber Optic Networks", 1993, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, p. 331, line 4 - line 7, figure 9-1
X	Hiramatsu, A. et al., "Hypermedia Photonic Information Network Based on WDM-SCM Broadcast and Select Switching," Conference Proceedings, Leos '96 9 th Annual Meeting, IEEE Lasers and Electro-Optics Society 1996 Annual Meeting (Cat. No. 96CH35895), Boston, MA, November 18-19, 1996, pp. 312-313
Y	Ho, K., H. Dai, C. Lin, "Hybrid WDM Digital Trunking System for both HFC and FTTC Access Networks", <u>Digest IEEE/LEOS 1996 Summer Topical Meetings</u> (Cat. No. 96 th 8164), NY, NY, pp. 37-38
Z	Kanno, N., K. Ito, "Fiber Optic Subcarrier Multiplexing Transport for Broadband Subscriber Distribution Network", <u>IEEE Intl. Conference on Communications Boston ICC/89 World Prosperity Through Communications</u> , June 11-14, 1989, Boston, MA, Volume 2, pp. 996-1003
AA	Kavehrad, M., E. Savov, "Fiber-Optic Transmission of Microwave 64-QAM Signals", <u>IEEE Journal on Selected Areas in Communications</u> , Vol. 8, No. 7, September 1990, pp. 1320-1326
BB	LeBer, J., M. LeLigne, "Digital Transmission on Electric Subcarriers in Optical Fiber Videocommunication Systems", <u>Optics Communications</u> , October 15, 1987, Volume 64, No. 2, pp. 120-126
CC	Li, J., K. Yano, "Development of AM/QAM Hybrid Optical SCM Transmission System", <u>Proc Intl Conf. On Communication Technology ICCT '96</u> , May 5-7, 1996, Beijing, China, Volume 1, pp. 575-577
DD	Lu, X., G.E. Bodeep, T.E. Darcie, "Broad-Band AM-VSB/64 QAM Cable TV System Over Hybrid Fiber/Coax Network," <u>IEEE Photonics Technology Letters</u> , Vol. 7, No. 4, April 1995, pp. 330-332

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FOREIGN PATENT DOCUMENTS

Document Number	Date	Country	Class	Subclass	Translation
					Yes No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EE	Nakamura, Y., H. Ohtsuka, S. Aikawa, H. Takanashi, "Advanced Techniques for Super Multi-Carrier Digital Microwave Radio With Trellis-Coded 256 QAM Modulation", NTT Radio Communication Systems Laboratories), pp. 389-394
FF	Nishikido, J. et al., "Multiwavelength Securely-Authenticated Broadcast Network" 11 th International Conference on Integrated Optics and Optical Fibre Communications, 23 rd European Conference on Optical Communications IOOC-ECOC 97. (Conf. Publ. No. 448), Sept. 22, 1997, pp. 17-20
GG	Ohtsuka, H., O. Kagami, S. Aikawa, H. Takanashi, "256-QAM Subcarrier Transmission for Broadband Distribution Networks", NTT Radio Communications Systems Laboratories, GlobeCom '91, pp. 1817-1822
HH	Park, J., A. Elrefaie, K. Lau, "1550-nm Transmission of Digitally Modulated 28-GHz Subcarriers Over 77 km of Nondispersion Shifted Fiber", <u>IEEE Photonics Technology Letters</u> , February 1997, Volume 9, Issue 2, pp. 256-258
II	Ryan, J., "WDM: North American Deployment Trends," <i>IEEE Communications Magazine</i> , February 1998, pp. 40-44.
JJ	Ryu, S., "Coherent Lightwave Communication Systems," Artech House, Boston, MA 1995
KK	Sargis, Paul D., et al., "10-Gb/s Subcarrier Multiplexed Transmission Over 490 km of Ordinary Single-Mode Fiber Without Dispersion Compensation," <i>IEEE Photonics Technology Letters</i> , Vol. 9, No. 12, December 1997, pages 1658-1660.
LL	Schlump, Dieter et al.: "Electronic equalization of PMD and chromatic dispersion induced distortion after 100 km standard fibre at 10 Gbit/s" PROCEEDINGS OF THE EUROPEAN CONFERENCE ON OPTICAL COMMUNICATION, 20 September 1998, pp. 535-536.
MM	Swaminathan, V., N. Froberg, L. Upadhyayula, "The end-to-end bit error performance of 64-quadrature amplitude modulated signals in a hybrid AM-vestigial sideband/QAM fiber-optic video transmission system", <u>Proceedings of SPIE-International Society for Optical Engineering</u> , Volume 2917, pp. 274-282
NN	Tai, C., Pi-Yang Chiang, W. Way, "Eight-Way, 70-km Transmission of 33-Channel 64-QAM Signals Utilizing a 1.3- μ m External Modulation System and Semiconductor Optical Amplifier", <u>IEEE Photonics Technology Letters</u> , Vol. 8, No. 9, September 1996, pp. 1244-1248
OO	Tang, D., "Multi-Gigabit Fiber-Optic Video Distribution Network Using BPSK Microwave Subcarriers", <i>IEEE 1989 MTT-S Intl. Microwave Symp Digest</i> , June 13-15, 1989, Long Beach, CA, Volume 2, pp. 697-701
PP	Wilson, G., "Capacity of QAM SCM systems utilising optically linearised Mach-Zehnder modulator as transmitter", <i>Electronic Letters</i> , Vol. 34, No. 25, December 10, 1998, pp. 2372-2374

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			Filing Date	July 30, 2001
			First Named Inventor	Ting K. Yee
			Group Art Unit Number	2633
			Examiner Name	Unassigned
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